Eshaan Naga Venkata G.

Data Science Major — Junior Year

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Experience

Research Intern May-Jul '25
IISER Bhopal *India*

- With Karthik Nambiar under the guidance of Dr Sujit at Moon Lab.
- Implemented a CNN policy network trained via imitation learning on **CARLA** Autopilot data to predict waypoints from raw visual input.
- Integrated multi-modal sensors (Cameras and LiDAR) into an off-road vehicle with a **Jetson AGX Orin** using **ROS**, and streamlined deployment through **Docker** for iterative, reproducible experimentation.
- Engineered a custom Wine-based setup to run CARLA on Apple Silicon Macs (unsupported platform), achieving GPU-accelerated simulation performance comparable to native Linux builds. 👉 *GitHub Discussion*

- **GitHub Repo:** `https://github.com/nveshaan/offroad_navigation`
  Project Page: `https://nveshaan.github.io/projects/offroad-navigation/`

Projects

Cooperative & Competitive RL Agents *ongoing*
`https://github.com/nveshaan/marl_f1`

- Experimented on various model-free RL algorithms in a multi-car racing **Gymnasium** environment, and compared their performace with model-based RL using latent state representations.
- Refactored a legacy RL multi-car racing environment to work with current Python and Gymnasium dependencies, resolving deprecated APIs and compatibility issues.

Muscle Wave Classifier *Guide: Dr Saptarshi Bej*
`https://github.com/nveshaan/muscle-wave-classifier`

- Collected and labelled 10,000 EMG recordings to construct a structured dataset and trained a neural network in **TensorFlow** to predict hand states from EMG signals, achieving 75% Accuracy.
- Deployed the model on an **Arduino**-driven RC car for real-time control using EMG predictions, as a proof of concept for improving wheelchair mobility in paralyzed individuals.

Skills

- **Programming Languages:** Python, R, SQL
- **Machine Learning Libraries:** Scikit Learn, PyTorch, Hugging Face
- **Tools & Technologies:** Docker, Linux, Git
- **Languages:** English (Fluent), German (Basic)

Education

2023 - 2027 **Indian Institute of Science Education and Research, Thiruvananthapuram**
Bachelor of Science, BS in Data Science